

# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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November 9, 2006

OK

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *PJL*

FROM: James D. Smith, Environmental Scientist I, Team Lead *DS* 01/22/07

RE: Mill Fork West Extension LBA/Federal Lease, Task ID #2656, PacifiCorp, Deer Creek Mine, C/015/0018

### SUMMARY:

PacifiCorp applied for a federal LBA to access previously unleased coal adjacent to the Mill Fork state lease. A new federal lease, UTU-84285, was issued November 1, 2006 to PacifiCorp, through Energy West Mining Company. The proposed Mill Fork West Extension LBA/Federal Lease amendment is to incorporate the new federal lease into the Deer Creek Mine MRP. Because it involves a new federal lease, this permit modification requires approval by the Secretary of the Interior.

When the Mill Fork lease was originally outlined by the BLM, the west boundary was based on the location of the Joes Valley Fault as it was projected by the USFS in 1997. The coal tract was transferred to SITLA as part of an exchange of federal and state lands and minerals under the Utah Schools and Land Exchange Act of 1998 (Public Law 105-335). PacifiCorp obtained the lease, ML-48258, from SITLA in 1999. In 2005, PacifiCorp made a new determination of the location of the Joes Valley Fault based on topography, aerial photography, resistivity and IP surveys, and in-mine horizontal drilling information. The revised location for the fault was several hundred feet west of the one originally used to define the Mill Fork lease; it became evident that a considerable volume of federal coal between the fault and the west boundary of the Mill Fork lease would become isolated and unrecoverable if the Deer Creek Mine plan were not modified to include recovery of this coal.

The BLM granted an exploration license for the Mill Fork West Extension LBA area with the intent of allowing the Permittee to build gate roads, bleeders, and longwall set-up rooms in the federal coal. However, longwall mining and sale of the coal was not to be done until the coal was leased and the lease area added to the state permit.

The proposed amendment is an IBC that will add 214 acres to the Deer Creek Mine permit, increasing the permitted area by 9.6 %. It is a change to the underground operations only and will not involve any new surface disturbance. The Permittee included the West Extension LBA area when they collected baseline data for the original Mill Fork Extension.

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The main hydrologic concern when the Mill Fork Extension was initially permitted was that mining would intercept Joes Valley Fault and divert surface and ground water from Joes Valley. This is still the main concern with the Mill Fork West Extension. Stipulation 19 of the Joint Decision Notice prohibits full-extraction mining within a 22 degree angle of draw, projected eastward from the surface expression of the Joes Valley fault: mining that could cause subsidence will not be permitted within the buffer zone.

Permittee's Action	Dated	DOGM's Action	Dated
Original submittal	05/30/2006	Assigned Task # 2544	
		Tech Memo - Hydrology	07/28/2006
		Deficiency Letter Sent	08/10/2006
Response to Task # 2544	09/21/2006	Assigned Task # 2656	
		Tech Memo - Hydrology	11/09/2006

**TECHNICAL ANALYSIS:**

**ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

**HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

**Analysis:**

**Baseline Information**

*Ground-Water Information*

Drawing MFS1866D shows UJV 213 is situated near both the end of a longwall panel and within the projected limit of subsidence. Although the thick overburden (Drawing MFS1825D) makes surface impacts from subsidence unlikely, this spring is located in an area where the potential for surface cracking is greatest. The Permittee has added UJV 213 to the water-monitoring plan. Mining in the vicinity of this spring isn't projected to begin until 2011 (MFU1840D) so monitoring should establish sufficient baseline before mining begins.

**Probable Hydrologic Consequences Determination**

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The PHC determination compiled by Mayo and Associates for the Mill Fork Extension is in Volume 12, Hydrology Appendix B. This PHC includes the Mill Fork West Extension LBA area. A discussion of the PHC is in Volume 12, Section R645-728.

The new information that now indicates Joes Valley Fault is several hundred feet farther to the west does not establish any reason to alter the conclusions of the PHC. Mining in the Mill Fork West Extension, with the mandated buffer zone, should not damage surface- and ground-water systems or water supplies in and adjacent to Joes Valley.

**Groundwater Monitoring Plan**

Because of its location near both the end of a longwall panel and within the limit of possible subsidence, and because it is associated with a water right, the Permittee has added spring UJV 213 to the monitoring plan.

**Findings:**

Information provided in the plan meets the Hydrologic Resource Information requirements of the regulations.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Coal Resource and Geologic Information Maps**

The Permittee has updated maps in Volume 12 that identify local geologic and hydrologic features. Drawing MFU1823D shows the revised projected location of Joes Valley Fault and the no-second mining buffer zone in relation to surficial geology. It also shows locations and elevations on the surface of all exploration drill holes and test wells within the Mill Fork and Mill Fork West Extension areas and the coal crop lines for the Hiawatha and Blind Canyon Seams.

Drawing MFS1824D (Blind Canyon Overburden), MFS1825D (Hiawatha Overburden), MFU1826 (Blind Canyon – Hiawatha Interburden), MFU1827D (Blind Canyon Structure Contour), and MFU1828D (Hiawatha Structure Contour) show the projected mine layouts in relation to the revised projected location of the Joes Valley Fault and no-second mining buffer zone.

**Findings:**

Information provided in the plan meets the Maps, Plans, and Cross Sections of Resource Information meets the requirements of the regulations.

## **OPERATION PLAN**

### **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

**Analysis:**

#### **Groundwater Monitoring**

Appendix A of Volume 9 contains the complete water-monitoring plan for the Permittee's mines. The detailed Hydrologic Monitoring Program in Volume 9 identifies monitoring locations in and adjacent to the Mill Fork West Extension LBA, the monitoring schedule, and water-quality analysis parameters.

The USFS holds water right 93-1576 (change a21560) on the spring identified by the Permittee as UJV 213, which lies within the no-second mining buffer zone (Drawing MFS1832D). Drawing MFS1866D shows UJV 213 is within the zone of potential subsidence from mining the Hiawatha Seam, located near both the end of a longwall panel and within the projected limit of subsidence. Although the thick overburden (Drawing MFS1825D) makes surface impacts from subsidence unlikely, this state-appropriated water supply is located in an area where the potential for surface cracking is greatest. The Permittee has added this spring to the operational monitoring plan. Mining in the vicinity of this spring isn't projected to begin until 2011 (MFU1840D) so monitoring should establish sufficient baseline before mining begins.

**Findings:**

Information provided in the plan meets the Operational Hydrologic Information requirements of the regulations.

## **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

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**Analysis:**

**Mine Workings Maps**

The Permittee has submitted maps showing the underground mine working and projected workings within the Mill Fork Lease and Mill Fork West Extension LBA. Updated Maps MFU1840D and MFU1841D project the mining sequence through 2020 for the Hiawatha Seam and 2015 for the Blind Canyon Seam.

Drawing MFS1824D (Blind Canyon Overburden), MFS1825D (Hiawatha Overburden), MFU1826 (Blind Canyon – Hiawatha Interburden), MFU1827D (Blind Canyon Structure Contour), and MFU1828D (Hiawatha Structure Contour) show the projected mine layouts in relation to the revised location for the Joes Valley Fault and no-second mining buffer zone.

**Monitoring and Sampling Location Maps**

HM-1, the Water Monitoring Location Map, is in Volume 9. For the Mill Fork lease and adjacent Mill Fork West Extension LBA, elevations and locations of monitoring stations used to gather data on water quality and quantity are marked on Drawings MFS1830D – Hydrologic Map and MFS1851D – Hydrologic Monitoring Map.

**Certification Requirements**

Maps have been certified or marked as *Review Copies*. The Division can give conditional approval to these maps on the Permittee's understanding that before final approval, all maps and cross-sections that require certification must be certified by a registered professional engineer or geologist, as appropriate.

**Findings:**

Information provided in the plan meets the Maps, Plans, and Cross Sections requirements of the regulations.

## **RECLAMATION PLAN**

## **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

**Analysis:**

**Hydrologic Reclamation Plan**

There is no planned surface disturbance in the Mill Fork West Extension LBA area. The Mill Fork West Extension does not require any changes to the Hydrologic Reclamation Plan outlined in the MRP.

*Water Monitoring*

The Permittee has added UJV 213 to the monitoring plan.

**Findings:**

The Reclamation Plan Hydrologic Information meets the requirements of the R645 Rules.

**RECOMMENDATIONS:**

The proposed amendment should be approved.